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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor	:	**RIEMSCHNEIDER**
Application No.	:	**10/535,161**
Filed	:	**05/16/2005**
For	:	**WIRELESS BATTERY MANAGEMENT SYSTEM**

APPEAL BRIEF

On Appeal from Group Art Unit 2838

Date: 08/14/2007

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Michael Ure
(Name)

8/14/07
(Signature and Date)

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I. REAL PARTY IN INTEREST

The real party in interest is NXP B.V., the successor in interest to the present assignee of record of the present application, Koninklijke Philips Electronics N.V., and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-19 are pending, all of which stand finally rejected and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

All amendments have been entered. No amendment after final rejection has been submitted.

V. SUMMARY of the CLAIMED SUBJECT MATTER

The present invention relates to a wireless battery management system. Physical properties (e.g., cell voltage) of one or more battery cells are measured by a cell unit and reported to a control unit (which may be located at a distance from the battery)

wirelessly. In one embodiment illustrated in Figure 1, a cell unit 5 is formed together with sensor terminals 6 in such a way that the sensor terminals may be secured to terminal posts of the battery by means of screws 7, for example.

The following analysis of independent claim 1 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
1. System for automated management of batteries, the batteries comprising at least one battery cell, the system comprising:		
at least one cell unit for measuring physical parameters of the at least one battery cell;	Fig. 1-Fig. 10: 5, 16, 22, 23, 37, 40, 41, 42, 45, 56, 67, 70.	Page 10, line 13 to page 19, line 17
a control unit; and	Figs. 1, 2 and 4: 10, 17, 30	Page 10, lines 25-28; page 11, lines 10-12; page 12, lines 2-23.
a transmitter for transmitting the measured values of the physical parameters to the control unit via a first wireless communication link.	Figs. 2 and 4	Page 11, lines 5-12; page 11, line 32 to page 12, line 23.

The following analysis of independent claim 8 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
8. Cell unit for measuring physical parameters of battery cells,	Fig. 1-Fig. 10: 5, 16, 22, 23, 37, 40, 41, 42, 45, 56, 67, 70.	Page 10, line 13 to page 19, line 17
the cell unit comprising a cell unit transmitter for transmitting the measured values of the physical parameters of the battery cells via a wireless communication link.	Figs. 2 and 4	Page 11, lines 5-12; page 11, line 32 to page 12, line 23.

The following analysis of independent claim 11 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
11. Control unit for receiving measured values of physical parameters of battery cells, the control unit comprising a control unit transmitter for transmitting control signals to a cell unit;	Figs. 1, 2 and 4: 10, 17, 30	Page 10, lines 25-28; page 11, lines 10-12; page 12, lines 2-23.
wherein the measured values are received via a first wireless communication link; and	Figs. 2 and 4	Page 11, lines 5-12; page 11, line 32 to page 12, line 23.
wherein the control signals are transmitted via a second wireless communication link.	Figs. 2 and 4	Page 11, lines 5-12; page 11, line 32 to page 12, line 23.

The following analysis of independent claim 14 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
14. Method for automated management of batteries, the batteries comprising at least one battery cell, the method comprising the steps of:		
measuring physical parameters of the at least one battery cell by at least one cell unit;	Fig. 1-Fig. 10: 5, 16, 22, 23, 37, 40, 41, 42, 45, 56, 67, 70.	Page 10, line 13 to page 19, line 17
transmitting the measured values of the physical parameters via a first wireless communication link to a control unit.	Figs. 2 and 4	Page 11, lines 5-12; page 11, line 32 to page 12, line 23.

VI. GROUNDS of REJECTION to be REVIEWED ON APPEAL

The issues in the present matter are whether:

1. under 35 USC 102(a), claim 8 is anticipated by Potega.
2. under 35 USC 103(a), claims 9 and 10 are unpatentable over Potega in view of Osborne.
3. under 35 USC 103(a), claims 1-3, 5 and 11-19 are unpatentable over Osborne in view of Potega.
4. under 35 USC 103(a), claims 1-5 are unpatentable over Imai in view of Potega.

VII. ARGUMENT

I. Rejection of Claim 8 as Anticipated by Portega

The rejection states at the top of page 15, "If the applicant feels a limitation is missing from the cited figures and column numbers, then the applicant must specifically point out what is missing, by comparing the recited limitations to what is given, and presenting a convincing argument."

As previously pointed out, and reiterated here, Applicant has not found within the voluminous disclosure of Portega, despite diligent search, the specific teaching of measuring physical parameters of the battery cell and transmitting the measured values of the physical parameters (e.g., to a control unit) via a wireless communication link as claimed. The citations provided do not establish any such teaching. Rather, this would appear to be the one teaching singularly absent from Potega.

The rejection states in part:

> Potega provides this wireless communications link between power supply and controller in Figs. 10 and 13, col. 54 lines 58-66. The benefits of using wireless communication means are well known.... Cell voltages are transmitted over this link—col. 54 lines 10-13.

Applicant respectfully disagrees.

Figure 13 does in fact illustrate wireless communication between an IR port 729 of a power supply 745 and an IR port 713 of a laptop computer. The question is, What is communicated across this wireless link? The cited teaching merely states that "Microcontroller 23 must have valid information regarding *the specific voltage*

requirements of supplied device 54...." This says nothing about "measured values of physical parameters of the battery cells" as claimed.

Another illustrative passage is the paragraph bridging columns 71 and 72 of Potega, which states: "The IR communications link in the prototype was used for data acquisition (for example, polling the supplied device for information on its power configuration, the presence of a battery, etc.)...."

Again, no mention of made of anything that can be construed as "measured values of physical parameters of the battery cells" as claimed. This is not surprising, considering that a characteristic feature of Potega is that the power supply is connected directly to the battery, which is moved outside the supplied device, typically a laptop PC (Potega, Figure 1). In such an arrangement, the power supply is in an equal or better position to perform monitoring of the battery than the supplied device, which lacks sensors. One would therefore not expect measured values of physical parameters of the battery cells to be communicated on an IR link from the supplied device to the power supply.

Accordingly, it may be appreciated that Potega fails to anticipate the invention of claim 8.

II. Rejection of Claims 9 and 10 As Unpatentable Over Potega In View Of Osborne

With regard to dependent claims 9 and 10, these claims depend from independent claim 8, which has been shown to be patently distinguishable over the cited reference. The rejection does not contend that Osborne in any way cures the deficiencies of Potega. Rather, the rejection states "Osborne does not disclose a wireless communications link to

transmit the measured values to the control unit." Accordingly, these claims are also patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable base claim.

III. Rejection of Claims 1-3, 5 and 11-19 As Unpatentable Over Osborne In View Of Potega

The same feature of claim 8 that is absent from Potega as discussed above is present in independent claims 1, 11 and 14, and is again absent from Potega.

Claim 1 recites in part "transmitting the measured values of the physical parameters of the (battery cell) to the control unit via a first wireless communication link."

Claim 11 recites in part "Control unit for receiving measured values of physical parameters of battery cells,...; wherein the measured values are received via a first wireless communication link."

Claim 14 recites in part "transmitting the measured values of the physical parameters (of the battery cell) via a first wireless communication link."

As made clear above, Potega does not contain any such teaching.

With regard to dependent claims 2, 3, 5, 12, 13 and 15-19, these claims depend from independent claims 1, 11 and 14, which have been shown to be patently distinguishable over the cited references. Accordingly, these claims are also patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable base claim.

IV. Rejection of Claims 1-5 As Unpatentable Over Imai In View Of Potega

Claim 1 recites in part "transmitting the measured values of the physical parameters of the (battery cell) to the control unit via a first wireless communication link."

The rejection states in part: "Imai does not disclose a wireless communications link to transmit the measured values to the control unit."

As has been demonstrated above, nor does Portega contain any such teaching.

Accordingly, claim 1 is believed to patentably define over the cited references.

With regard to dependent claims 2-5, these claims depend from independent claim 1, which has been shown to be patently distinguishable over the cited references. Accordingly, these claims are also patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable base claim.

In view of the above, applicant submits that all of the above referred-to claims are patentable over the teachings of the cited references.

VIII. CONCLUSION

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Date: 8/14/07

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IX. APPENDIX: THE CLAIMS ON APPEAL

1. System for automated management of batteries, the batteries comprising at least one battery cell, the system comprising: at least one cell unit for measuring physical parameters of the at least one battery cell; a control unit; and a transmitter for transmitting the measured values of the physical parameters to the control unit via a first wireless communication link.

2. System according to claim 1, wherein the control unit comprises a control unit transmitter for transmitting control signals to the at least one cell unit via a second wireless communication link.

3. System according to claim 2, wherein a switching unit is provided; and wherein the switching unit is adapted for temporarily establishing a controllable current path between poles of the at least one battery cell.

4. System according to claim 2, wherein a battery comprises a plurality of battery cells, and wherein the switching unit is adapted to perform a charge balancing such that charging states of the plurality of battery cells adjusted to each other.

5. System according to claim 2, wherein the at least one cell unit is at least partially disposed in an interior region of the at least one battery cell for providing direct contact to an electrolyte of the at least one battery cell; and wherein the at least one cell unit is at

least partially surrounded by robust and chemically resistant material.

6. System according to claim 2, comprising a communication link between the cell units for direct communication with one another.

7. System according to claim 2, wherein the at least one cell unit comprises at least one of: electric leads; a storage; and a controllable rectifier; wherein the electric leads comprise high frequency decouplers for converting high frequency electromagnetic radiation into electric energy; wherein the storage is adapted for storing electric energy, and wherein the controllable rectifier is adapted for controlling the charging of the at least one battery cell.

8. Cell unit for measuring physical parameters of battery cells, the cell unit comprising a cell unit transmitter for a transmission of the measured values of physical parameters of the battery cells via a wireless communication link.

9. Cell unit according to claim 8, wherein a switching unit is provided; and wherein the switching unit is adapted to perform a charge balancing such that the charging states of the battery cells are adjusted to each other.

10. Cell unit according to claim 9, comprising at least one of: electric leads; a storage; and a controllable rectifier; wherein the electric leads comprise high frequency decouplers for converting high frequency electromagnetic radiation into electric energy;

wherein the storage is adapted for storing electric energy; and wherein the controllable rectifier is adapted for controlling the charging of the battery cells.

11. Control unit for receiving measured values of physical parameters of battery cells, the control unit comprising a control unit transmitter for transmitting control signals to a cell unit; wherein the measured values are received via a first wireless communication link; and wherein the control signals are transmitted via a second wireless communication link.

12. Control unit according to claim 11, wherein the control signals provide synchronization information to the cell unit.

13. Control unit according to claim 11, wherein the control unit addresses each cell unit individually; wherein the control unit initiates the measurement of the physical parameters of the battery cells; wherein the control unit requests the transmission of measured values of the physical parameters.

14. Method for automated management of batteries, the batteries comprising at least one battery cell, the method comprising the steps of: measuring of physical parameters of the at least one battery cell by at least one cell unit; transmitting the measured values of the physical parameters via a first wireless communication link to a control unit.

15. Method according to claim 14, further comprising the steps of: individually controlling a charge of the at least one battery cell; transmitting individual control signals

from the control unit to the at least one cell unit via a second wireless communication link.

16. Method according to claim 14, wherein each cell unit measures the physical parameters of a respective group of battery cells, the groups comprising at least one battery cell; wherein each battery cell belongs to at least two groups; wherein the measured values of the physical parameters of particular groups are subtracted from one another or otherwise processed for obtaining the physical parameters of individual battery cells.

17. Method according to claim 14, wherein a density or a fill level of electrolyte in the at least one battery cell is measured by detecting a change in an emitted electromagnetic signal.

18. Method according to claim 15, wherein signals are transmitted by at least one technique selected from the group consisting of: transmission of electromagnetic waves, inductive transmission, transmission of light, transmission of sound, and transmission of ac currents.

19. Method according to claim 14, wherein a charge balancing is performed to adapt charges of a plurality of battery cells to each other by temporarily establishing a current path between poles of the plurality of battery cells.

X. APPENDIX: RELATED PROCEEDINGS

NONE

XI. APPENDIX: EVIDENCE

NONE